**Application for an exempted fishing permit to continue research on ways to reduce halibut bycatch mortality rates in non-pollock trawl fisheries through modifications to catch handling procedures on catcher processor vessels**

**Date of Application: August 29, 2017**

**Requested permit dates:**

January 20 2018 to December 31 2019

**Applicant Information:**

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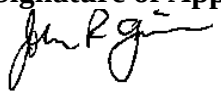

**EFP vessel information:**
A final list of participants will be provided to National Marine Fisheries Service (NMFS) prior to final issuance of this EFP. As occurred for the 2016-2017 EFP, the intent is to allow the participation of any trawl catcher processor (CP) vessel in non-pollock target fisheries of the Bering Sea Aleutian Islands (BS/AI) under the Amendment 80, CDQ, and Trawl Limited Access sectors. Additionally, this application requests that CP vessels qualified to participate in the EFP are allowed to do deck sorting in Gulf of Alaska (GOA) non-pollock fisheries under all the same rules and conditions pertaining to the EFP for their BS/AI operations.

**Objectives and focus:** Based on the results from deck sorting operations since January of 2017 (as will be presented in the Alaska Seafood Cooperative (AKSC) October 2017 EFP report to the North Pacific Fishery Management Council), it is quite clear that deck sorting can generate significant reductions in halibut bycatch mortality in BS/AI non-pollock trawl fisheries. Even more encouraging is that these reductions have been achieved in a wider set of non-pollock trawl target fisheries than was anticipated. Additionally, deck sorting has proven to be workable for

fisheries within the Amendment 80, CDQ, and Trawl Limited Access sectors of the BS/AI. Perhaps the most impressive outcome from the 2017 operations is that when weather allows, deck sorting can be successful during winter months. Prior to 2017, deck sorting had never been attempted early in the year due to concerns that there would not be a sufficient number of days with weather allowing for it. Also, the expectation was that the generally smaller halibut taken in the winter months would not be feasible for sorting but our 2017 results show that deck sorting is workable in winter months overall even accounting for the times when weather does not allow for it.

The modified catch handling and observer sampling procedures in effect in the 2017 EFP were clearly integral to the success with deck sorting this year. Those procedures reflect a set of changes to the permit worked out between the permit holder and NMFS late last year. These went into effect in January 2017 including some streamlining of the catch handling and observer notification rules of the EFP and an allowance for boats to customize (2-4) the number of observers used for deck sorting. The number of observers could be adjusted based on participants' catch volumes, shift schedules, and other factors affecting the way deck sorting is done on their specific vessels.

Recognizing the need to build on these strong halibut mortality reduction results, this EFP application focuses on issues that remain important to the eventual implementation of a regulatory program. The objective of this EFP is therefore to maintain the catch handling, observer data collection, and other rules from the 2016-2017 EFP as modified for 2017 and incorporate new elements intended to allow us to collect information and experience critical to the upcoming implementation of deck sorting in 2020.

AKSC would like a new exempted fishing permit covering 2018-2019 that uses as the starting point the rules/fish handling and sampling protocols in place with the 2017 permit with the following modifications and new elements:

1) Safe deck conditions and procedures for observer data collections**:** The 2018-2019 EFP should have requirements (described below) for vessel-specific "safe deck sorting plans" that detail how safe passage and safe working conditions for observers are incorporated into deck sorting operations. These plans should be specific to the conditions, facilities, and practices associated with fish handling and collection of data by observers on each participating vessel during deck sorting. NMFS would review and approve these plans prior to each EFP vessel's start of deck sorting operations under the new EFP in 2018 and forward.
2) Uniformity in fish handling rules between fishing areas: Several Bering Sea/Aleutian Islands non-pollock CP vessels also fish seasonally in the Gulf of Alaska. Many of these routinely fish the two fishery management areas without offloading product. Since deck sorting is now incorporated into most of the fishing operations of Amendment 80 vessels in the Bering Sea, captains and crews that switch back and forth into the Gulf of Alaska now face challenges to ensure that halibut are handled correctly under EFP rules governing their BS/AI operations and non-EFP rules when operating in the Gulf of Alaska. Differences in fish handling procedures can create confusion and considerable

effort has been made to train and monitor crew members to ensure they follow the correct procedures. AKSC feels a single set of catch handling procedures for these vessels would be better. The allowance to use deck sorting in the Gulf of Alaska requested as part of this EFP may also create some additional savings in halibut mortality in the GOA that would not otherwise be possible if deck sorting remains limited to the BS/AI. This pilot for deck sorting in the GOA will also help inform whether deck sorting is workable there given the differences in volumes of catch, size of halibut, and other conditions known to affect the degree of success with deck sorting.

3) Steps to ensure that deck sorting stays focused on its primary objective: The objective of deck sorting is to reduce halibut mortality rates. The new permit for 2018-2019 should include a few minor adjustments and AKSC outreach to participants to help ensure that deck sorting is for that purpose and not to be used for reducing the number of halibut in the factory (halibut subjected to observer sampling and halibut bycatch extrapolations). The introduction of a 35 minute maximum time limit for deck sorting operations should help to keep participants focused on the objectives of deck sorting. This time limit is based on 2017 EFP data showing that appreciable savings of mortality can be achieved at times for up to 35 minutes after the codend is brought on board. The addition of this maximum deck sorting time limit will therefore help ensure that the added work that the EFP creates for observers (on deck and for data entry) is done in pursuit of the primary objective for deck sorting. The permit holder will also work with participants to establish improved communications between vessel crew and observers to help focus deck sorting on halibut that are in the most viable condition.
4) Standardize chutes so that all halibut are moved on a single chute: This EFP should require that all EFP vessels use a single chute and maintain a single flow of fish to move halibut from the deck to the area where the observers collect data from sampled fish. This should avoid the problem seen on a few vessels with multiple paths for fish where observers have had challenges identifying which halibut is to be sampled at the random sampling intervals. These chutes with upper and lower pathways have also apparently reduced the observers' ability to keep track of the overall number of halibut sorted per tow. All halibut chutes in 2018 and on should also be equipped with metal length strips used to length halibut. This should hopefully limit the need for the plastic length strips to the unlikely situation where a metal length strip becomes unusable for some reason. The plastic length strips currently in use can cause delays by wearing out or being lost overboard in inclement weather during data collection activities.
5) Continued testing and development of automated technologies to collect halibut length/weight data: Use of electronic length boards, automated vision-based length measurement technology, and possibly new versions of hopper or batch scales for use on deck may increase sample size, and accuracy, and possibly reduce the time and work required of observers to collect EFP data, thereby speeding up the process of getting halibut back in the water and improving viability. Exemptions contained in the permit are needed because despite all the work to handle halibut carefully in these scientific projects, the amount of time needed to return halibut to the water is inevitably increased somewhat. The exemptions in the current EFP cover the additional time and handling needed for testing automated length measurement systems and halibut tagging for scientific purposes. This application requests that the current exemptions in the permit

for these scientific projects be expanded for testing of new devices designed to collect weight of halibut instead of just length.

6) Changes to collection and accounting of halibut in the factory: The current EFP rules require that halibut not removed on deck be collected by the crew in the factory downstream of where observer sampling occurs. The collected halibut are then made available to the observer for a census count and total weight prior to discard. This is intended to allow comparison of estimations of factory halibut from observer sampling relative to a census in the factory. There has been considerable interested in these comparisons at the haul-specific and trip-specific basis as well as over longer time spans both at the vessel level and for the EFP overall. What has been learned so far shows that observer sampling methods are not necessarily very consistent with the census on a tow-specific or even trip-specific basis, but estimations usually track reasonably well over the course of longer periods of time (e.g., quarters, the year) for vessel-specific comparisons and for the EFP overall. Seeing this, the permit holder and FMA agree that removing the duties for the census for fishery observers is warranted. At the same time, several vessel operators have expressed a strong interest in continuing to collect the census data because they feel it is critical for their captains to understand halibut bycatch rates on a tow-specific basis as part of their halibut avoidance programs. For this reason, this EFP requests that interested vessel operators be allowed to continue the factory census collections as long as their vessel crew assumes all of the collection, counting, and weighing duties. Proposed details for what is required of those opting in and out of the census for the 2018-2019 EFP are provided below.

**Reasoning behind selection of these elements for the 2018-2019 EFP:**

Deck sorting has improved and expanded to where it is achieving significant savings of halibut mortality. The catch handling and observer data collection procedures in place for deck sorting in 2017 reflect considerable experience and success so making significant changes to them is not a priority. Prioritization of the items listed above has been arrived at through discussions between the Alaska Fisheries Science Center (AFSC) Fisheries Monitoring and Analysis (FMA) staff working on deck sorting, staff at the Alaska Region of NMFS, and AKSC. Since the start of deck sorting operations in January of 2017, AKSC personnel have participated in bi-weekly meetings with all the parties listed above. These meetings have focused on day-to-day problems and unanticipated issues, questions, and concerns that have arisen on a vessel-specific basis. Recent meetings have concentrated on a broader set of issues including improving safety, the question of how well we are accomplishing the EFP objectives, unanticipated sampling and operational issues affecting all EFP vessels, and the development of ideas to solve remaining data and information needs for implementation of deck sorting. The focal areas above come directly from these discussions.

**Background and specifics of how each of the six items for inclusion into the 2018-2019 EFP will be accomplished:**

Item one - Safe deck plans for observer activities on deck sorting vessels: The data collected to account for the halibut sorted on deck and its viability is critical for full and credible assessment

of the halibut mortality rates and usage from deck sorting. At the same time, deck sorting inevitably increases the amount of time observers are on deck relative to their work practices without deck sorting. Deck sorting also involves the observer working in a location near the stern where most boats sort halibut out of the flow of fish as it is dumped into below-deck fish tank(s). The halibut sorted from the catch is then moved to the closest off-board scupper via a chute designed for this purpose. Between where the halibut are sorted and where they go overboard, each participating vessel has an observer work station with a table, length strip attached to a chute, and other facilities where the observers tally the number of halibut sorted and collect data from randomly selected halibut. This observer work station is located where it is as free from potential hazards as possible but the observer is nonetheless working in a more exposed location than would otherwise occur without deck sorting. For this reason, some additional steps are warranted to increase safety of observers for deck sorting. Vessels in the EFP differ greatly in size, layout, and amount of room and facilities available for data collections on deck. This necessitates individualized safety plans that reflect specific details for how an observer can have safe passage to their work stations and safe working conditions on deck where they collect data.

To accomplish this, each participating vessel would be required to review safety procedures with respect to this requirement prior to the start of the 2018 EFP. Following this they would submit a detailed written plan including diagrams etc. for how observers can safely gain access to their stations and work there under conditions that are as safe as possible during deck sorting. Once reviewed and approved by NMFS (prior to the start of deck sorting operations on each vessel), these plans would be in operation over the course of the 2018-2019 EFP. Feedback from observers and vessel personnel over the course of deck sorting operations in 2018-2019 would be used to evaluate procedures in the plans on each vessel. Amendments to the plan may be necessary as experience and information become available. The process for amendments to deck sorting safety plans would be made in writing and must be approved by NMFS before becoming effective. This addition to the EFP would not only help increase safety during the EFP operations over the next two years but it will help us gain experience with safe deck sorting procedures and conditions for observers so these practices will be in place for the start of a regulatory program for deck sorting in 2020.

<u>Required elements of each plan would be as follows:</u>

- Specify how observer will be apprised of safety plan elements and channels of communication for questions or issues
- Identify personal protective equipment (PPE) required on deck
- How to access deck from factory or other indoor location
- How to access sample station once on deck
    - This should include a description of the specific route to be taken
- Identify potential hazards and how they will be mitigated
- Identify areas that observer must not enter
- Identify safe areas/procedures on deck during movement of codend, other gear, or vessel
- Describe how deck area is secured before exiting deck

- Describe weather conditions that would preclude deck sorting
    - This should be cast in terms of vessel-specific conditions rather than generic "weather conditions"
- The above details would provide an objective guide for the observer to verify that safe deck sorting procedures are being followed
    - In this way, the plan can be referenced by the observer and/or the vessel crew in case any parties question whether safe protocols are being duly respected and followed

Item two - Uniformity in fish handling/data collection in BS/AI and GOA for vessels approved to participate in 2018-2019 deck sorting EFP: Vessels that participate in GOA fisheries seasonally have thus far had to check out of the deck sorting EFP when they make GOA trips. This has required them to inform AKSC and then AKSC contacts NMFS to inform them of the vessels' expected dates for exit and reentry with respect to participation in the EFP. Operationally for the vessel checking out of the EFP, it has to conduct meetings to help everyone understand that they are changing catch handling procedures from those for deck sorting to normal Amendment 80 catch handling procedures where removing anything from the catch on deck is expressly forbidden. These meetings extend to the observers to make sure they know that the vessel is changing the way it handles halibut etc. and everyone is on the same page. Likewise, the Observer Program has to check in with observers in this regard. The transition in and out of the EFP involves other complexities for vessels and observer provider companies to ensure that the vessel has observers meeting the EFP requirements when they check back in. In at least one case, an EFP vessel in 2017 has not been able to return to deck sorting on its first trip back from the GOA because one of the observers on board had not been briefed for the EFP due to a misunderstanding of the rules in place. Overall, the current situation that does not allow deck sorting in the GOA for vessels qualified to participate in the EFP creates considerable complexity and extra work for NMFS, observer providers, the permit holder, and participants. This would be reduced by allowing vessels qualified to participate to continue to follow the same catch handling procedures for deck sorting while operating in the GOA.

Our request for the 2018-2019 EFP is that vessels qualified for the EFP be able to do deck sorting in the GOA under all the same rules applying to deck sorting in the BS/AI. This includes the same observer coverage requirements (two or more observers) and the same catch handling/data collection rules applying to deck sorting under this EFP.

Potential benefits from this are that information on mortality rates and feasibility of deck sorting in the GOA will be collected and analyzed as part of the EFP analyses for this EFP. Reduced halibut mortality rates are also possible with this approach during the 2018-2019 EFP. Participants with significant experience in deck sorting in the Bering Sea who also have considerable experience in GOA fisheries feel these halibut mortality savings may be significant.

Just as has been the case whenever additional sectors (e.g. CDQ) are brought into deck sorting, the addition of the GOA to the EFP would likely require some additional work on the part of NMFS to figure out how GOA data from deck sorting can be entered into the NMFS catch accounting system.

Item three - steps to ensure that deck sorting stays focused on its primary objective: With the allowance to use deck sorting from the beginning of the 2017 fishing year, AKSC actively monitored halibut mortality rates for participating vessels to see how they differed from the other years where deck sorting did not start until mid-June. Our attention to this was to see if there was a higher frequency of smaller halibut in the catch and other factors that would affect outcomes and potential benefits from deck sorting. One unexpected outcome was that deck sorting in the winter months resulted at times in relatively higher numbers of halibut being sorted. Sorting through and accounting for all these halibut resulted in longer sorting times on average than had been experienced before. In this regard, the rule of thumb from our past experience has been that viability starts to decline after approximately 20 minutes from the time the net is brought on board. The data from winter deck sorting, however, frequently did not reflect this drop off in viability starting at 20 minutes. One possible explanation is that colder air temperatures on deck, or perhaps with seafloor and deck temperatures being similar, increases the time on deck when halibut are viable. Data from this winter in fact showed that a considerable proportion of halibut on tows with high numbers of deck sorted halibut were still in "excellent" condition out to 35 minutes from the time the net came on board. Seeing this, AKSC notified participants that its past recommendation of limiting sorting times to around 20-30 minutes was no longer in effect at least for winter deck sorting operations.

With respect to this unanticipated situation, AKSC and NMFS Observer Program began to see something else not encountered in the past: some tows with very high numbers of halibut sorted on deck where after about 35 minutes the viabilities were often comprised of a high fraction of "poor" or "dead" fish but sorting continued. Both NMFS and AKSC felt that when this occurred it stretched the intent of deck sorting to where it was weighted more towards avoiding the uncertainty of observer sampling in the factory than the goal of reducing halibut mortality rates. This was puzzling because continuing to deck sort after 35 minutes should have made little sense from a vessel operation perspective because those halibut receiving low viability scores on deck would have received nearly the same ratings if accounted for in the factory (90%). This didn't seem to be a good use of time on deck towards the objectives of the deck sorting, for the vessel, and for observers.

When the captains of the vessels where this occurred were asked about this they pointed out that they didn't know the fish were receiving poor viability because determining viability was the observer's call and they believed it was inappropriate to ask the observer about how the halibut were being rated. In discussing this with the Observer Program, we collectively agreed that in

this case it was actually a useful and good practice for the boats to ask the observer what ratings the halibut sorted on deck were getting during the deck sorting process. AKSC at that point encouraged vessel personnel to designate a deck crew member to communicate with the observer on this matter. For tows with high numbers of halibut sorted, vessels were asked to communicate with the observer to know when viability ratings no longer achieved a sufficiently high proportion of the halibut in excellent condition, hence no longer meeting the intent of deck sorting.

Close communication with the observer on viability is now what AKSC recommends as standard practice for deck sorting operations. To help participants incorporate this into their operations we plan to institute the following steps in the 2018-2019 EFP. First, AKSC will increase its efforts during post-EFP debriefings with EFP vessels this fall and winter to encourage them to develop effective lines of communication with the observer over viability ratings during deck sorting. Secondly, because we did note a fairly bright line with 35 minutes from the time the net is brought on board, we want the 2018-2019 EFP to have a maximum limit of 35 minutes. All EFP participants would be required to provide a means for everyone on deck to know when the limit is reached (e.g.an audible signal). The wheelhouse will be in charge of starting the timing and indicating when the limit is reached.

With AKSC's stepped up efforts during its post 2017 and pre-2018 meetings with EFP participants, we expect that deck sorting in the coming two years to come up against the time limit when gains in viability can be made by continuing to sort halibut up to the time limit. We also plan this fall and winter to do additional work with vessel operators that still could benefit from additional improvements in their efforts to communicate with observers on viability information during deck sorting operations.

Item four - Standardize halibut chutes and include durable length indicators firmly attached to the chute: At the request of a few EFP participants at the end of 2016, NMFS continued to allow for halibut chutes with an upper and lower pathway at the point where the observer collects data. Chutes of this design had to be approved by NMFS separately subject to drawings and pictures of the specific arrangement on the vessel. The continued allowance for this chute type in 2017 was to gain additional feedback from observers as to whether they were satisfactory for collection of EFP data. The idea behind an upper and lower pathway was that only the halibut selected for sampling would have to be lifted to the observer's work table (tables are required to be between 0.9 and 1.1 meters in height). This avoided the need to lift approximately 80 percent of the halibut, thereby reducing stress on them as well as reducing possible injuries to crewmembers from lifting halibut.

While well intentioned, this dual pathway design has apparently lowered the ability for some observers to track which halibut are selected for sampling. NMFS has also learned of some

accounting challenges at times of high volume of deck sorting fish. For this reason NMFS has decided that the use of the upper/lower chute set-ups is not workable. For the 2018-2019 EFP, all vessels should therefore be required to have a single pathway for halibut so effectively, all halibut would have to be brought up to and pass over the sampling table. Several vessels with more space in the area where observers work have come up with ways to ramp fish up to the table height so they do not have to be lifted or only have to be lifted part of the distance from the deck to table height. A few boats have even installed a specialized conveyor belt (without tines) for this purpose as well. Constraints on space apparently do not allow for these kinds of systems on boats that currently use the upper/lower pathway chutes so we expect that lifting every fish will be the only way for some of the participants to meet this proposed new requirement.

Given the recurrent problem of plastic length strips wearing out and breaking or flying overboard at times during sorting operations in the past, thereby delaying data collections and getting halibut back into the water, we feel steps to address this problem are merited. AKSC therefore feels that more durable length strips should be required for participants starting in 2018. To this end, AKSC will provide EFP vessels with non-ferrous metal length strips of appropriate length. Length increments in centimeters will be clearly marked on the strips. Strips can be welded onto or otherwise permanently attached to the chutes or tables at observer workstations. Some participants may prefer to have the length increments etched or embossed into their existing metal chutes. In either case, NMFS Alaska Region personnel should verify the installation of length strips prior to the start of vessel EFP operations in 2018 as part of their other pre-season activities to inspect video monitoring systems and other equipment required for EFP and regular Amendment 80 operations. Plastic length strips would only be used as a back-up if the permanent length strips become unusable for some reason.

Item five - Continued testing and development of automated technologies to collect halibut length/weight data: Existing language in the EFP allows an exemption to the regulations for handling prohibited species and getting them back into the water as soon as possible and with minimal injury. This exemption is limited to the purpose of collecting scientific data for projects that increase our knowledge of halibut movement/survival or for development of automated systems to improve deck sorting data collections. In addition to our participation in tagging projects, AKSC has utilized this exemption for work with NMFS to field test vision measurement systems. One such system is FMA's "chute camera" system designed to collect length data from fish slid through the chute. The exemption is needed because field tests of the chute camera prototypes involve multiple steps to collect data before getting some of the halibut through the chute and back in the water. The purpose of the added steps is to collect data against which the performance of the chute camera is later validated. In reality, the added time and handling has only applied to a small sample (about 30 halibut) where additional data is collected for the halibut before they are put back into the water. For these fish, they are first weighed on a platform scale then measured on a length strip and the data are recorded separately. Next, they

are run through the chute camera. These specific fish are identified by triggering the indicator on the chute camera that is later used to match the data from the chute camera with the fish for which extra data are collected.

For the 2018-2019 EFP, AKSC expects to work with NMFS to improve and finalize testing of the chute camera prototype that has been tested on more than five field tests on EFP boats. On a parallel path, AKSC also hopes to work with Archipelago Marine Resources on an on-deck scale that may prove workable for "batch" weighing individual halibut. As with the chute camera trials, we anticipate fieldwork on this scale will require us to hold small numbers of halibut out of water longer than would otherwise occur with deck sorting. The additional time out of water will be necessary for independent weight verification using a platform scale prior to weighing the fish on the new experimental scale. Hence, the exemption we are requesting for the 2018-2019 EFP is intended to allow us to expand the scope of scientific research projects aimed at improving methods for collection of automated length and weight data for scientific purposes in development of automated length and weight measurement systems.

Item six - changes to collection and accounting of halibut in the factory: At the outset of deck sorting in the earlier EFPs, there was considerable concern on the part of the fishing industry regarding the potential that halibut removed on deck could increase the imprecision of estimation of halibut in the factory through observer sampling. This concern was based on halibut already being a relatively rare component in the catch and with deck sorting typically removing 70-80 percent of the halibut on deck, industry felt this could increase the potential for extrapolations from observer sampling to overestimate the amount of halibut in the factory relative to the true amount for a given haul. To look at this, the last two EFPs have collected a significant amount of data and our analyses have helped to inform the collective understanding of the level of precision associated with observer sampling. We now have a better idea of variance between halibut estimates in the factory compared to the census at a haul-specific, trip-specific, and over longer timeframes for individual vessels and for the overall EFP. For the most part, over the longer timeframes at least, the difference between the census and estimations from sampling is smaller than many in industry expected. Hence, concern over sampling for estimation of factory halibut should be diminished. For this reason, at the completion of the 2016-2017 EFP, we feel the objectives of these census data collections have been realized and further collection of census data for this purpose is not needed.

An unanticipated use of the census data for halibut emerged, however, in our year-end meetings with EFP participants last December and with company managers whose vessels participate in the EFP at mid-year this year. At the strong direction of their companies, some captains have been using the census data to get a more precise estimate of haul-specific halibut catch amounts. Their use of this data is for improving decisions on whether to remain in a fishing area versus moving to an area with potentially lower halibut bycatch rates. Our examination of variance

between census data and haul-specific observer estimations supports the notion that, assuming it is done correctly, the census is a far-less variable indicator of tow-specific halibut bycatch rates. To use it to understand the overall amount of halibut in the area, one has to add the census amount in the factory to the quantity of halibut sorted on deck and these data are normally available soon after observers collect data from the tow. In this respect, total catch of halibut per tow arrived in this way is probably the best "real-time" data for bycatch avoidance.

For this reason, some EFP participants have a strong interest in continuing to have their crews collect the census in the factory. The companies interested in this are ones where the layout in the factory does not always allow for good visual estimates of the amount of halibut before they are discarded. For vessels where the halibut sorted off the conveyor belt can be readily tallied by the crew as it moves off-board without collecting it, continuing to do the census is probably a lower priority. For vessels where the census is the only way to get robust total halibut catch rates, the allowance to have the crew continue to collect it in baskets or a tote is requested here. The vessels for which continuing to do the census is a priority are ones where the factory is less spacious or has more complex layouts such that several crew members would be needed to account for the halibut if they were not going to be held as part of a census collection.

To accommodate this, we see this element of our application as an option at the beginning of the EFP with a one-time opt out clause. Participants interested in continuing to do the census would have the crew assume <u>all</u> of the collection and accounting work of the current census. To opt in, they would notify the permit holder and NMFS prior to the start of their participation in the 2018-2019 EFP. These vessels will continue to use the current monitoring equipment in place for the 2016-2017 EFP and assume all duties for the census including collection of halibut, counting, weighing, and entering the data into the "factory halibut" tab of the Excel spreadsheet AKSC provides to EFP participants.

If for some reason vessels opting in come up with an alternative way to get the haul-specific halibut information currently provided by the census they can opt out of doing the census and this would be in effect during their next EFP trip. Likewise for those who opt out initially, if they discover they cannot get the information they need for understanding bycatch rates without the census collection, they can opt back in. In this case, however, opting back in will not be effective until NMFS approves their factory set up for the census collections (normally done in conjunction with approval of their observer work table etc. at the beginning of a fishing year).

For vessels that continue to collect the census of halibut in the factory, the crew's collection of halibut in the factory will need to occur in a location that does not interfere with observer sampling. Current rules against using observer equipment (e.g., baskets) for collecting halibut will be maintained. Observers will have no responsibilities to enter data on factory halibut and all such work will need to be done by vessel crew assigned to this task.

A mortality rate of 90% will continue to be applied to the factory halibut estimated through observer sampling on vessels continuing to collect census data. The vessels opting out of the census will have the discard mortality rate approved in the 2018 and 2019 annual specification process (85% in 2017) applied to the observers' estimate of factory halibut. The reason for the 90% rate for factory halibut for boats staying with the census is that with the census halibut are typically held out of water longer than otherwise occurs. The 90% rate was validated by viability rate analysis of factory halibut collected via census in the 2011 deck sorting EFP.

**EFP target fisheries, timing, and project area**

AKSC requests that this permit be in effect by the 2018 trawl fisheries on January 20, 2018 and remain in effect through December 31, 2019. We understand that this timing probably involves the permit application being in front of the NPFMC in October which is when we are planning to present the results covering 2017 operations under the current deck sorting EFP. Activities under this new EFP will occur in areas open to non-pelagic trawling in the Bering Sea, Aleutians Islands, and Gulf of Alaska management areas. Flatfish fisheries will be the focus of EFP activities although some target fishing for Pacific cod, Atka mackerel, and Pacific Ocean Perch will likely occur as well.

Catch compositions and amounts are expected to be similar to non-EFP fisheries conducted during these times and in these areas. EFP fishing in the Bering Sea is expected to be concentrated mostly east and northeast of the Pribilof Islands, and in the "Horseshoe" (northeast of Dutch Harbor), although as occurred in the 2016-2017 EFP, participants have expanded their use of deck sorting as they have refined procedures and learned how to best incorporate it into operations in a wider set of target fisheries and fishing locations. This EFP does not request or depend on gaining access to areas closed to non-pelagic trawl fishing. Non-pelagic trawls with required modified sweeps will be used to conduct EFP fishing whenever fishing occurs for flatfish in the BS/AI and Gulf of Alaska. Depending on halibut bycatch rates, EFP vessels may use halibut excluders to help control halibut bycatch rates. Use of halibut excluders along with deck sorting occurred extensively in the 2015-2017 EFPs and is typical of Amendment 80, CDQ, and Trawl Limited Access fisheries for trawl catcher processors.

**Non-halibut species and PSC use and catch accounting**

The approach to this EFP in terms of catch accounting mirrors what has been done with all the past deck sorting EFPs. Specifically, AKSC receives annual target species allocations, including yellowfin sole, rock sole, and flathead sole. Additionally, AKSC vessels and some of the other vessels expected to participate in the EFP regularly engage in other non-allocated BSAI flatfish fisheries, such as arrowtooth and Kamchatka flounders. Within AKSC, allocated quotas are distributed to vessels or companies. Individual captains and company representatives use a combination of data sources to ensure fishing amounts do not exceed quotas. Additionally, AKSC managers monitor catch amounts for all cooperative vessels, and NMFS monitors aggregate cooperative quota catch to ensure quotas are not exceeded. Non-allocated target species are managed by NMFS. In-season managers determine when non-allocated total allowable catch (TAC) amounts are reached and close fisheries accordingly.

Observer data collected on Amendment 80 vessels are electronically transmitted to FMA, and then transmitted to NMFS Alaska Region in Juneau, AK. The catch accounting system (CAS) expands observer data, stores these data, assigns fishery targets, and performs other critical in-season management tasks. These data are used by NMFS and AKSC to manage both allocated and non-allocated target fisheries.

For this EFP, both allocated and non-allocated target and prohibited species catch data will be managed, tracked, and stored in the CAS according to non-EFP fishing protocols. NMFS will debit allocated aggregate non-halibut catch from AKSC allocations and those for other vessels participating in the EFP. **No additional groundfish or halibut quota is requested as part of this EFP application, and all groundfish catch will accrue against the respective Amendment 80, CDQ, and Trawl Limited Access target species and non-allocated catch allowances.**

**EFP project management**

As permit holder, AKSC is responsible for ensuring the EFP is meeting the objectives and following the prescribed procedures. For this reason, AKSC will monitor performance of participating vessels and continue to communicate with captains and representatives of companies operating EFP vessels to ensure that crew activities on vessels meet the intent of the EFP to reduce halibut mortality and achieve the objectives of the EFP. As has occurred in the past deck sorting EFPs, participating vessels are required to report all data relevant to their performance in the EFP to AKSC via the Excel spreadsheet provided to them for this purpose. Daily reporting is required of all participating vessels. When necessary, AKSC will also have its field project managers on board selected trips to observe that EFP procedures are followed and captains, mates, and crew members understand these procedures. As with other EFPs, AKSC will also take the lead for the analysis of data and conducting interviews with captains and other key crew members during and following the EFP to inform AKSC's draft and final reports on the EFP.

**Providing notice for EFP trips**

The 2016-2017 EFP had a requirement for providing seven day notice to NMFS prior to initial EFP trips and 72 hour notice for briefing observers working on EFP vessels for the first time and whenever new observers came on board. This EFP will once again use observers to collect data. NMFS has notified us that they intend to incorporate more training/briefing on EFP procedures into their normal cycle of pre-season briefings for observers prior to the 2018 season. This is expected to greatly expand the pool of observers that can work in the EFP. For this reason, NMFS is considering dropping the requirement for 3 day notice to NMFS for briefing observers at the start of the EFP trips or when new observers rotate onto EFP vessels. We are supportive of dropping the three day notice for observer briefings if NMFS is successful in expanding its training activities to more observers pre-season. For the most part, EFP participants and observer providers have established good communications and planning, so in most cases, slowdowns due to the three-day notice are not common. Dropping the three-day notice would be helpful to participants in cases where inevitable delays starting trips still occur from time to time.

**Exemptions to the Amendment 80 and other regulations needed for this EFP**

To accomplish the study objectives, specific regulatory exemptions from current Amendment 80 catch handling procedures will be needed:

1. Catch handing regulations currently prohibit catch sorting or removal on deck, prior to observer sampling (50 CFR 679.93(c)(1)). Additionally, these regulations require all catch to be weighed on a NMFS-approved scale. During the EFP, catch estimates and viability assessments of halibut will occur principally on deck (and in the processing area for any halibut missed on deck) according to the methodology described below. These activities would normally occur at the observer work station below deck.
2. Second, regulations at 50 CFR 679.93(c)(5) prohibit catch from remaining on deck without an observer present. Because halibut will be handled on deck, exemption from this regulation is necessary.
3. Regulations at 50 CFR 679.7(g)(2) prohibit sorting catch prior to observer sampling. Because sampling will occur on deck, a regulatory exemption will be needed.
4. PSC regulations require prohibited species to be returned to the sea as soon as possible while allowing accounting for PSC. Exemption from these regulations is necessary (to allow holding tanks and tagging of halibut and passing them through the chute camera system under development and other projects described above that depend on this EFP). The scope of the exemption needed here is limited to the EFP where AKSC will be doing scientific research projects on EFP vessels such as halibut tagging projects and testing of automated length measurement or weight estimation systems as discussed above. AKSC will notify NMFS of these projects within the EFP so that NMFS can do outreach to observers so they understand there will be some small departures from the normal EFP procedures.

**Provisions for public release of data and information from EFP and provisions for interim and final reports from EFP**

Upon completion of the fieldwork described above, the EFP applicant (principal investigator) will analyze the EFP data and draft a report summarizing findings. The draft report will be a concise description of EFP objectives and methods, and the qualitative and quantitative findings. This draft report and the data used in the analysis will be made available for review by FMA, NMFS, Alaska Region, and IPHC.

Once the principal investigator receives and incorporates draft report comments, a second draft will be compiled and shared with the above agencies. After comments on the second draft are incorporated into the report, the principal investigator will notify the North Pacific Fishery Management Council (Council) that the report is ready for presentation, and make it available to Council staff. Finally, the principal investigator will present findings to the Council and its advisory bodies at their request.